

### MINDS-i® PRODUCT SAFETY INFORMATION

When safety precautions are followed, your MINDS-i\* system will provide years of enjoyment. Use care and good sense at all times when operating this product. Failure to use your system in a safe, sensible manner can result in injury or damage to property. You and you alone must insure that the instructions are carefully followed and all safety precautions are obeyed.

- Water can cause the electronics to short out and can cause permanent damage.
- Always turn on the transmitter before turning on the receiver.
- Fully extend the transmitter antenna before operating your vehicle.
- · Before turning on your radio system, check to make sure that no one else is running on the same frequency.

• CHOKING HAZARD: Do not allow children under age 3 or any individuals who have a tendency to place objects in their mouths to play with any part of the MINDS-i system, including, but not limited to: connectors, pieces, electronics, radio transmitters, wheels, tires. The system contains small parts which could accidentally be swallowed and cause suffocation.

- When the system is powered and/or in motion, keep fingers, face, tools, loose clothing, hair, and all other body parts away from gears, wheels, etc. Do no wear gloves while operating machinery. Even plastic parts can pinch, cut, or crush.
- The transmitter's antenna could also cause injury if played with violently or pointed towards someone's face.
- Never operate your MINDS-i\* system on streets or in any areas where full-size vehicles are.
- Do not pick up your MINDS-i\* system when it is in motion.
- Never charge, run or store your MINDS-i\* system in a location subject to high temperatures, low temperatures or high humidity. Do not store in direct sunlight.
- To avoid electronic malfunction, do not allow the vehicle to become wet. Short circuits will produce a very strong electrical current. Should your MINDS-i\* system become wet, stop using it immediately.



WARNING! Electrocution Hazard. Do not use the materials provided for other than its intended purpose.

- Do not put it into fire.
- · Always use recommended batteries. If improper batteries are used, they may become hot, leak and may rupture.
- Do not attempt to recharge non-rechargeable batteries.
- Only batteries of the same equivalent type as recommended are to be used. Do not mix old and new batteries.
- · Exhausted batteries are to be removed from the system and replaced with new ones. Recycle all used batteries.
- Do not lick batteries. If battery appears to be leaking or has a crystalline deposit on the outside, dispose of it immediately (wear gloves when handling, preferably nitrile or other non-reactive material).
- Do not run a wire between battery terminals, as wire will get very hot, can be irreparably damaged or explode.
- Make sure the batteries are installed with the correct polarity as shown. Do not disassemble your batteries. Never allow them to become hot or to burn. To avoid short-circuits, avoid getting them wet. Do not short circuit batteries.
- If liquid from inside the batteries contacts your skin or clothes, wash them with water. If leaked battery fluid gets into your eyes, flush them immediately with cool water and seek medical attention. Do not rub eyes.
- Always wear safety glasses to protect your eyes. Note that normal glasses, while usually made of impact-resistant plastic, will not afford sufficient protection from shrapnel or flying debris.
- Always wear close-toed shoes to protect your feet from heavy or sharp objects, which might be dropped.
- If you have long hair, keep it tied back or under a hat to avoid it becoming caught in moving parts.
- The MINDS-i\* system contains small parts. Do not ingest. Do not insert into any orifice (e.g. nostrils, ears, etc).
- The system contains metal parts. Cutting or bending can cause parts to break; resulting in sharp edges which can cut skin.
- Battery disposal. Do not throw batteries into the trash, especially rechargeable batteries. Contact your local waste disposal office for information on battery disposal. Batteries should be stored as directed by your local hazardous materials disposal office until pickup (usually in a hard sided waterproof, non-conductive container, e.g. a plastic bucket).

pickup (usually in a hard sided waterproof, non-conductive container, e.g. a plastic bucket).

WARNING! IMPORTANT! RESPONSIBLE ADULT SUPERVISION IS REQUIRED FOR CHILDREN UNDER THE AGE OF 14. THIS PRODUCT IS NOT DESIGNED FOR UNSUPERVISED USE BY CHILDREN YOUNGER THAN 14 YEARS OLD.

All pictures descriptions and specifications found in this instruction manual are subject to change without notice.

MINDS-i® maintains no responsibility for inadvertent errors in this manual. Visit www.mymindsi.com for the latest updates and information.

MINDS-i® is a high-performance Construction/RC/Robotics System, which is NOT intended for use on the public roads or congested areas where its operation may conflict with or disrupt pedestrian or vehicular traffic. Read all enclosed information before operating. Fully illustrated, step-by-step instructions describe adjustment, operation, and required maintenance procedures. MINDS-i® should not be operated in a crowd, or without adequate space. In an effort to continually upgrade our products, MINDS-i® reserves the right to make improvements and modifications to this system, which may not be reflected in the photographs and specifications printed on this box. PROPOSITION 65 WARNING: This product contains chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm.

**Terms & Conditions:** All orders placed with MINDS-i, Inc (phone, fax, mail, internet/web & email) constitute the acknowledgment and acceptance of all conditions listed below. All purchases remain the property of MINDS-i\*, Inc until paid for in full. All orders shipped to a Washington State address must pay sales tax as required by the Washington State Department of Revenue. In the event that an order placed on our web-site does not calculate sales tax and the order is being shipped to a Washington State address, MINDS-i\* will calculate the sales tax when the order is processed and call or email the customer with the new amount. All prices, materials, design, color, contents included with a product and product specifications are subject to change without notice. Some product images may be shown with optional items that are sold separately. Depending on the products ordered and the destination of the order, certain shipping services may not be available. MINDS-i\* will not be responsible for pricing errors and may cancel the order. Orders will not be shipped until all Credit Card information is verified and matched. All other orders (check or money order) will not be shipped until payment has been received in full. All unpaid orders will be canceled after 30 calendar days. All weights shown for products are used for shipping calculation only and may not reflect actual weight of the product.

**Product Warranty:** MINDS-i\* warrants to the original buyer that our products are free from defects in materials and workmanship for a period of 120 days from the original date of purchase (original purchase receipt required). This warranty does not cover abuse, misuse, incorrect wiring, modifications, alterations, connector damage, wear and tear or robot competition damage. If the Product is determined to be defective within the warranty period, MINDS-i\* or its authorized service provider will, at our sole option, repair or replace any defective parts free of charge, or refund the purchase price. What you must do: Return the Product in its original packaging or packaging affording equal protection, freight prepaid, with proof of purchase, to an authorized MINDS-i\* service provider. You are responsible for all shipping charges. For more information, contact MINDS-i\* at (509) 252-5767 or info@mymindsi.com.

**Shipping Errors and Defective Products:** Claims for shipping shortages, errors, or defective materials must be in writing and received by MINDS-i\* within ten (10) days after receipt of shipment by buyer. Failure to make such claim within the stated period shall constitute an irrevocable acceptance of the goods and an admission that the goods fully comply with all the terms and conditions of the buyer's order.

MINDS-i° is Designed and Manufactured in the United States Some components are manufactured in China and the Philippines.

Patents US 7,517,270; US 7,410,225; US 7,736,211; US 7,841,923; MX 288350; CN ZL 200680044576.1; Additional Patents Pending. Trademarks 3,420,137 and 3,487,694

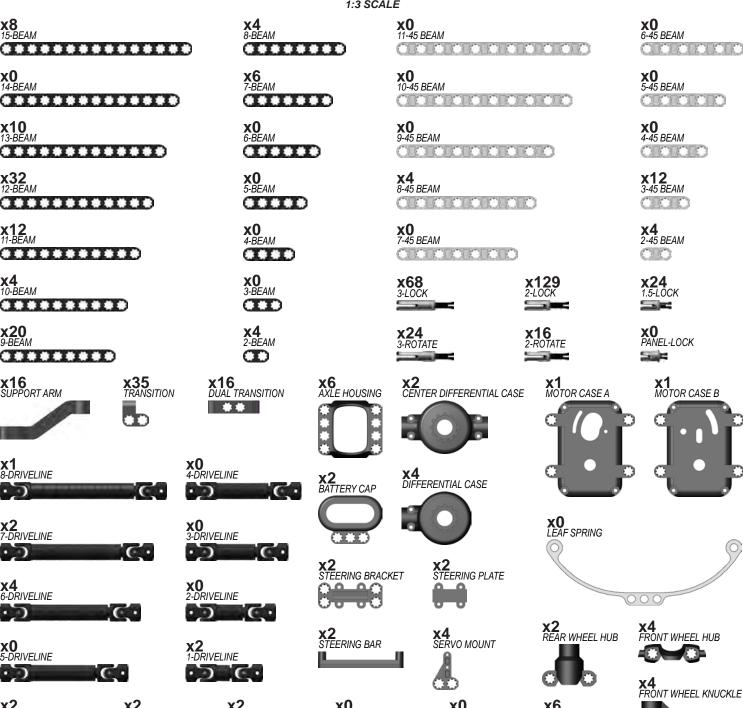
Copyright © 2014 MINDS-i Inc. All rights reserved.

MINDS-i, Inc 22819 East Appleway Avenue Liberty Lake, WA 99019 USA



### PARTS INVENTORY PAGE 1

1:3 SCALE





**x2** ROBOT SERVO HORN 0

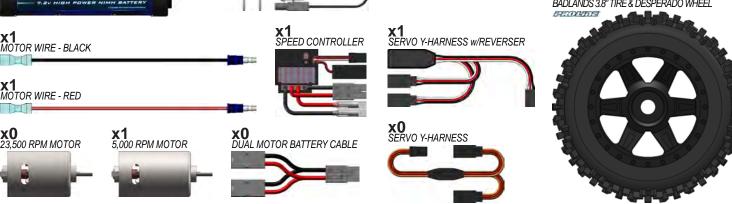
**x0** BODY POST 

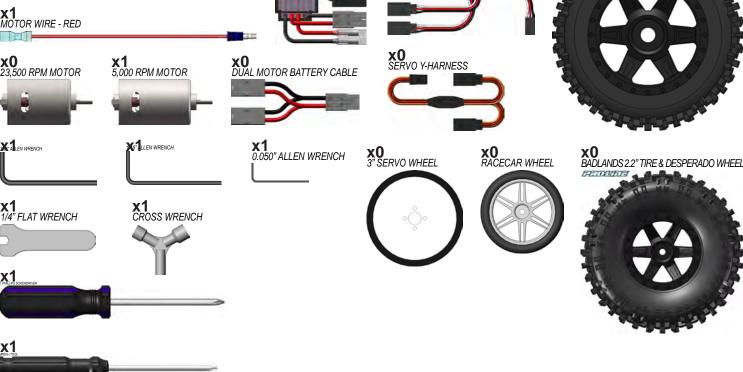
**x0** 12mm WHEEL NUT

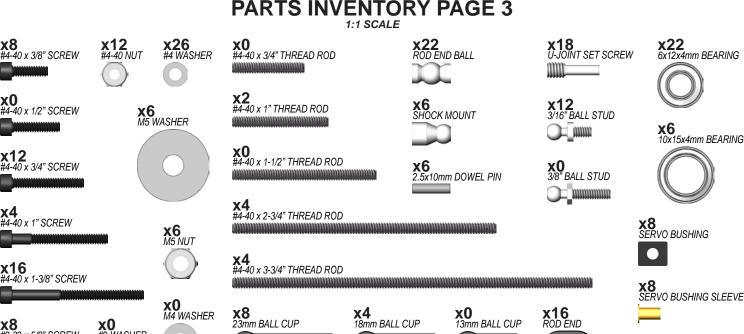
**x6** 17mm WHEEL NUT 0



#### PARTS INVENTORY PAGE 2 **x8** 4.8" F<u>OUR LINK ARM</u> **x2** DIFFERENTIAL SPOOL **x3**DIFFERENTIAL CARRIER **x0** 78-T SPUR **x1** 15-T PINION **x0** 23-T PINION **X1** 87-T SPUR **x0** 3.6" FOUR LINK ARM **x6** 90mm SHOCK **x1** MOTOR SHAFT **x6** OUTPUT GEAR SHAFT **x0** 2.4" FOUR LINK ARM **x0** HS-755MG SERVO **x0** HS-311 SERVO **X0** HSR-<u>1425CR SER</u>VO **x6** SPIDER GEAR **x2** 2.0" THREAD COLLAR **x3** RING GEAR **x6** M5 WHEEL END SHAFT **X0** M4 WHEEL END SHAFT **x4** 1.2" THREAD COLLAR **x2** HS-485HB SERVO **x0** HS-645MG SERVO **x3** CARRIER SHAFT **X4** PINION GEAR **x0** COTTER PIN **x0** 0.4" THREAD COLLAR **x12**CARRIER SCREW **x0** TURNTABLE PLATE **x0** LARGE SERVO PLATE **x0** SERVO PLATE **x1** 7.2v 3000 mAh BATTERY **x1**BATTERY CHARGER **x6** BADLANDS 3.8" TIRE & DESPERADO WHEEL **x1** SPEED CONTROLLER **x1** SERVO Y-HARNESS w/REVERSER







## PARTS INVENTORY PAGE 4 **x0** ARDUINO BASE PLATE **x0** ARDUINO UNO **x0** IR DISTANCE SENSOR **X0** PING))) SENSOF **x0** 3-PIN CABLE FLAT TO LATCH **x0** PUSH BUTTON **x0** SENSOR SHIELD **x0** 3-PIN CABLE FLAT TO SEPARATE **x0** QTI SENSOR **x0** ARDUINO COVER **x0** USB CABLE **x0** ARDUINO BATTERY HARNESS **x0** SERVO CABLE MALE TO MALE **x0** SERVO CABLE MALE TO FEMALE **x0** 5x5 IR PANEL **x0** USB THUMB DRIVE **x0** VOLTAGE REGULATOR

## **CONNECTOR ASSEMBLY AND USAGE**

**HELPFUL INSTRUCTIONAL VIDEOS AVAILABLE AT: www.mymindsi.com** 





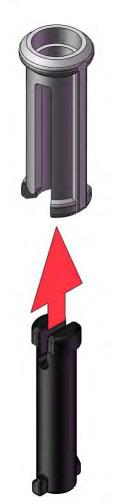








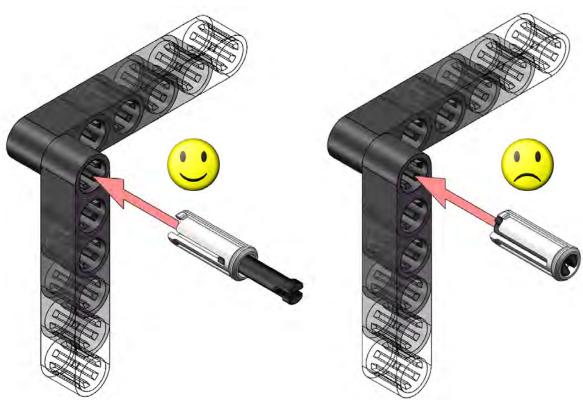




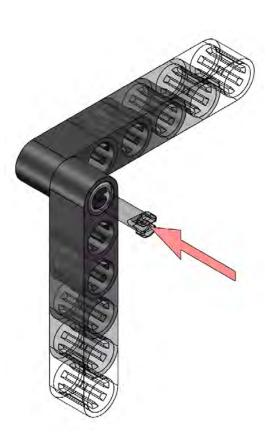




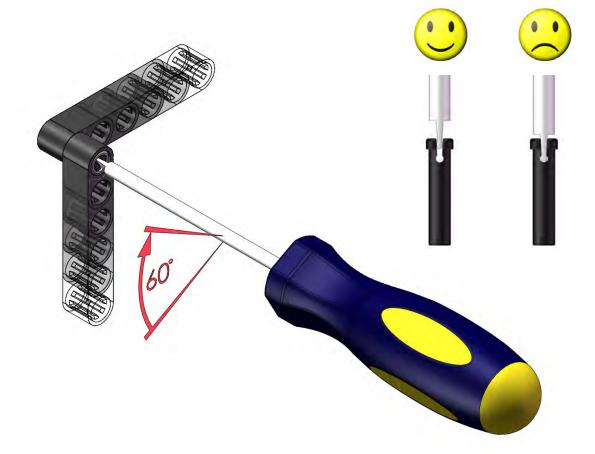








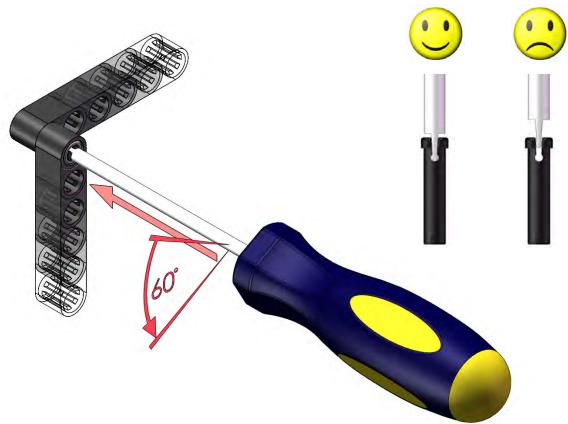




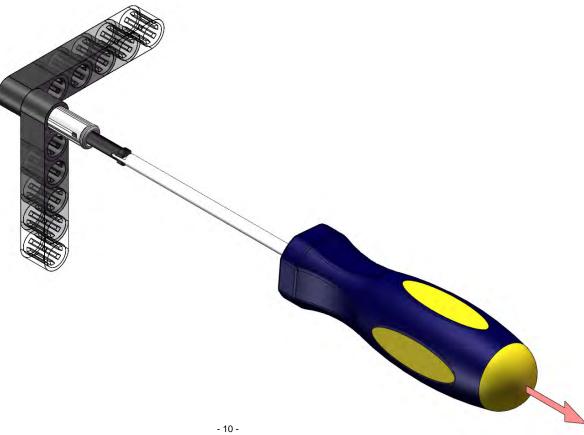












## **MOTOR CASE ASSEMBLY**

**HELPFUL INSTRUCTIONAL VIDEOS AVAILABLE AT: www.mindsieducation.com** 



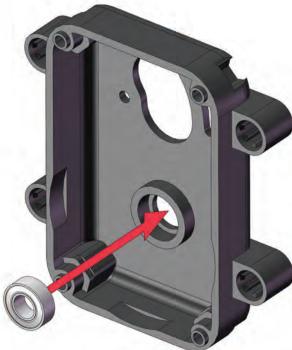














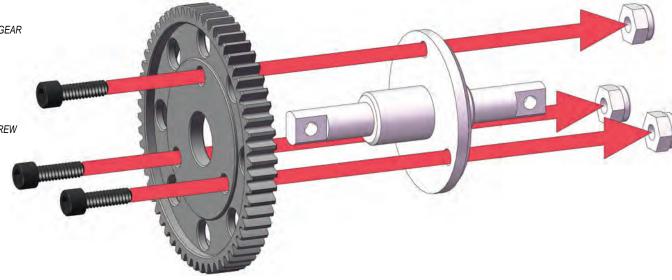




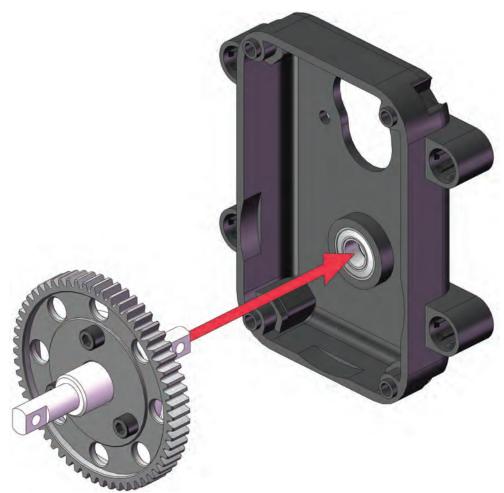


**x3** <u>#4</u>-40 x 3/8" SCREW









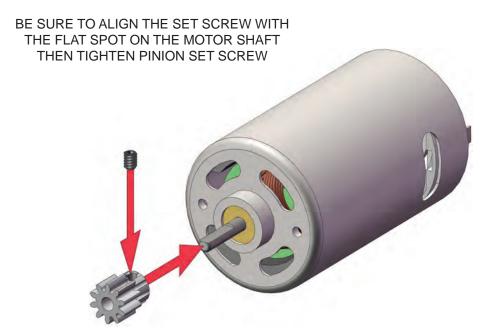




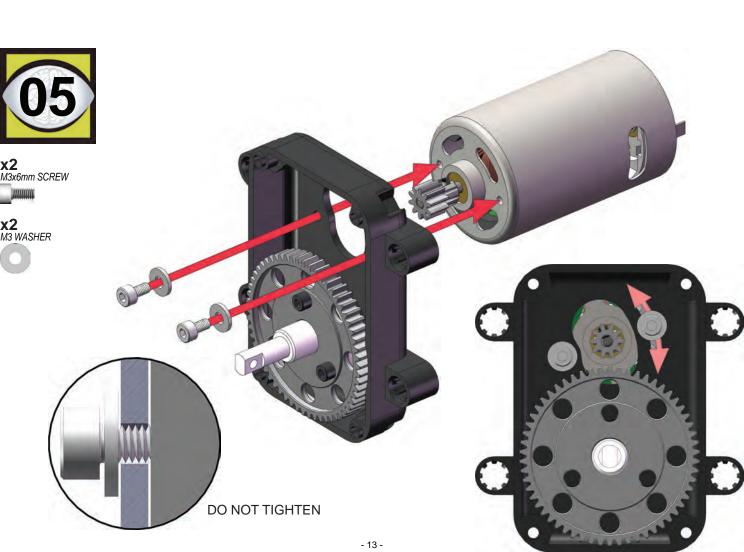
**x 1** 10T 32P PINION GEAR

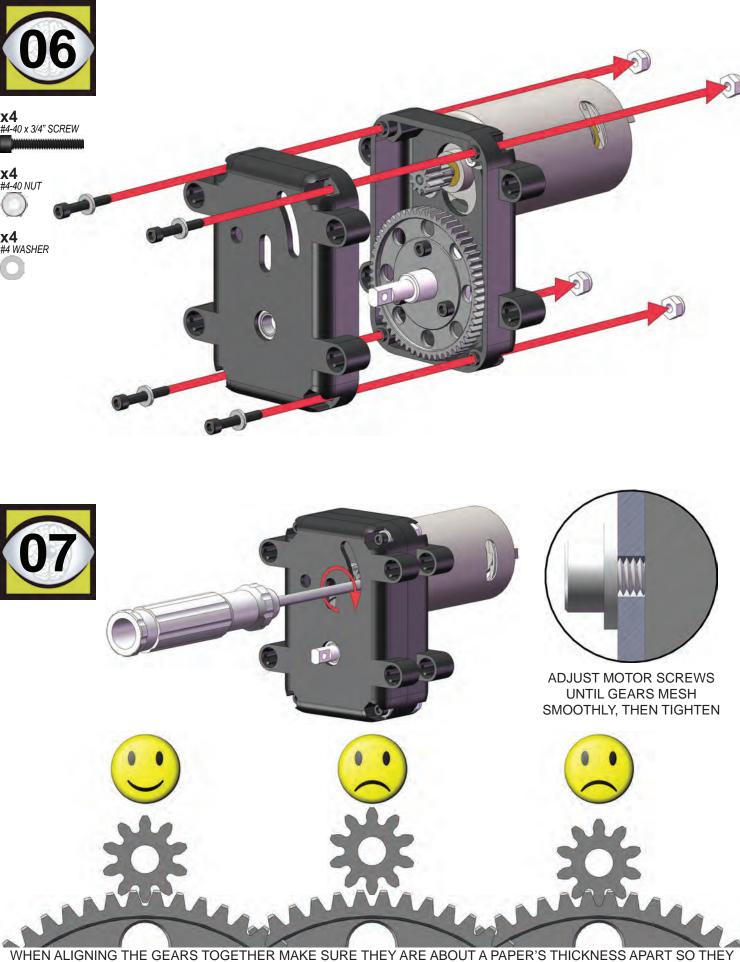


**x1** PINION SET SCREW



MOUNT PINION GEAR FLUSH WITH END OF MOTOR SHAFT



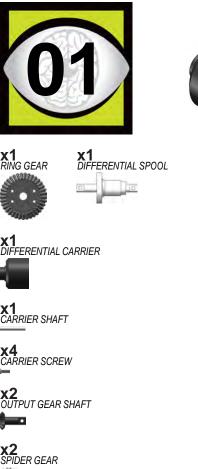


MESH SMOOTHLY. DO NOT LEAVE THEM LOOSE OR PRESS THEM TOO TIGHT TOGETHER OR IT MAY DAMAGE THE GEARS OR PUT TOO MUCH STRESS ON THE MOTOR.

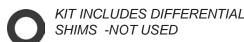
## **DIFFERENTIAL ASSEMBLY**

HELPFUL INSTRUCTIONAL VIDEOS AVAILABLE AT: www.mymindsi.com

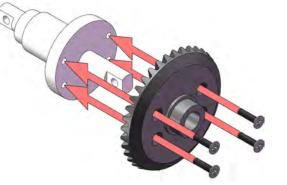








# BEST FOR: HANDLING



BEST FOR:
TRACTION
NOT RECOMMENDED
FOR 6x6





**x2** 6x12x4mm BEARING

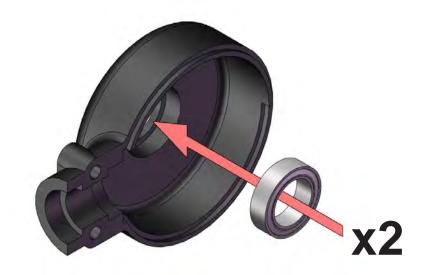














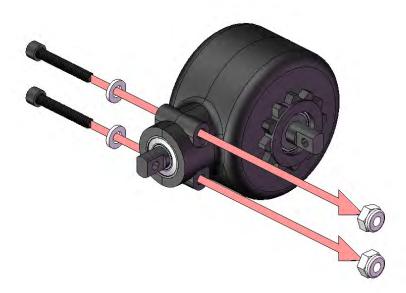












**NOTE:** MAKING SURE THE SCREW HEADS ARE ON THE SAME SIDE AS THE RING GEAR IS AN EASY WAY TO REMEMBER WHICH SIDE IT'S ON.

# **CENTER DIFFERENTIAL ASSEMBLY**

**HELPFUL INSTRUCTIONAL VIDEOS AVAILABLE AT: www.mymindsi.com** 







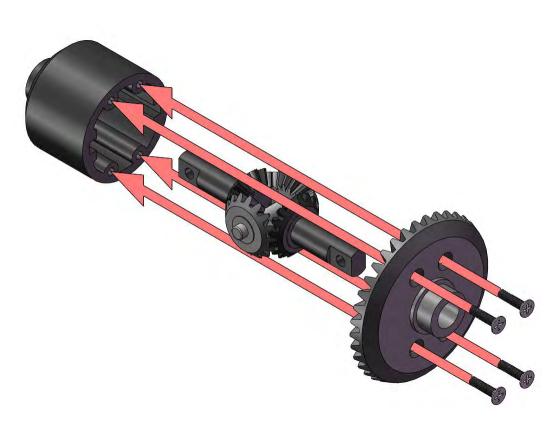
















**x4** 6x12x4mm BEARING





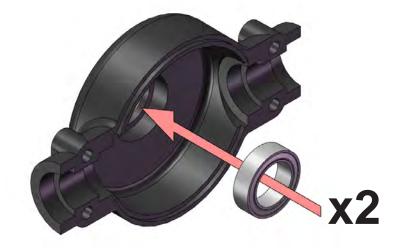


**x2** CENTER DIFFERENTIAL CASE

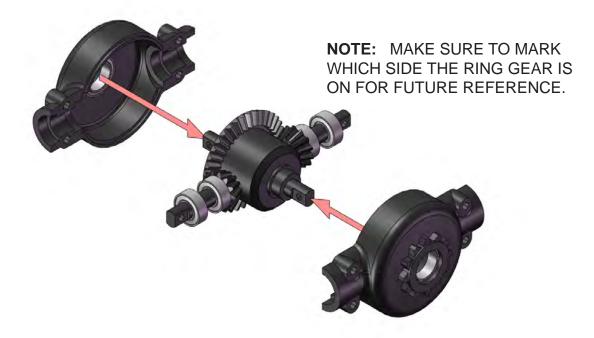


**x2** 10x15x4mm BEARING



















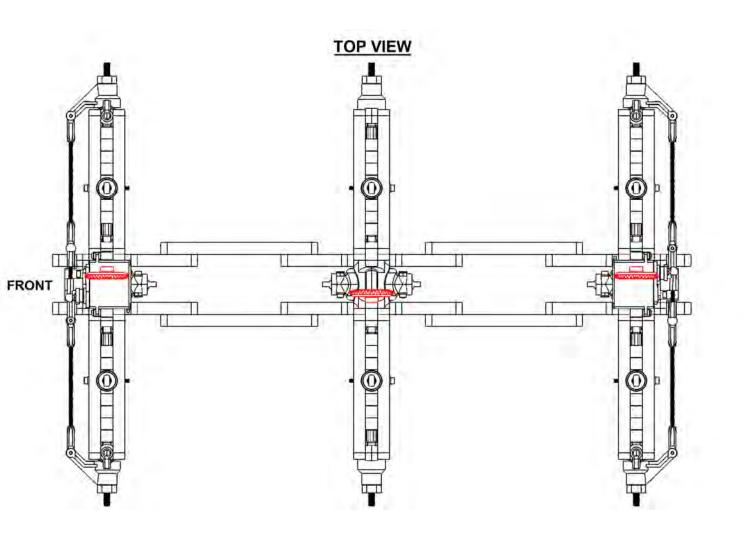
**NOTE:** MAKING SURE THE SCREW HEADS ARE ON THE SAME SIDE AS THE RING GEAR IS AN EASY WAY TO REMEMBER WHICH SIDE IT'S ON.

## **NOTICE:**

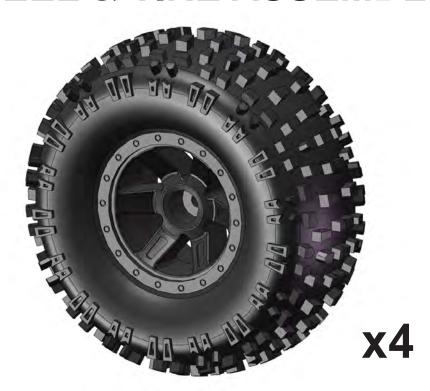
THE ORENTATION OF THE DIFFERENTIALS IS VERY IMPORTANT. MAKE SURE TO PAY CLOSE ATTENTION TO THE ASSEMBLY OF THE DIFFERENTIALS, ESPECIALLY WHICH SIDE THE RING GEAR IS ON, AS IT DETERMINES THE WHEELS DIRECTION OF ROTATION.

REFER TO THIS DIAGRAM WHEN ATTACHING THE AXLES TO THE FRAME, INSURING THE RING GEARS ARE IN THE APPROPRIATE LOCATIONS. HAVING THE DIFFERENTIALS IN BACKWARD WILL RESULT IN THE WHEELS ROTATING THE WRONG DIRECTION.

IT IS RECOMMENDED THAT YOU MANUALLY CHECK THE ROTATION OF THE DRIVETRAIN BEFORE INSTALLING THE ELECTRONICS. IF THEY ARE NOT ROTATING IN THE PROPER DIRECTION, THE AXLE MUST BE REMOVED AND THE DIFFERENTIAL TURNED UPSIDE-DOWN.



# WHEEL & TIRE ASSEMBLY













NOTE: MAKE SURE BOTH SIDES OF THE TIRE ARE PROPERLY SEATED ON THE RIM.





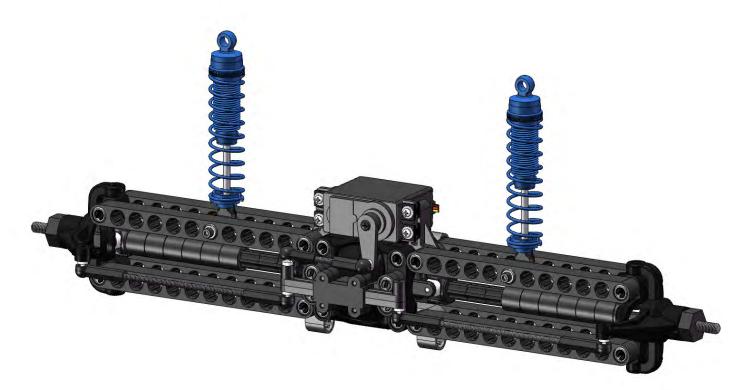
OPTIONAL: IF YOU WOULD LIKE TO GLUE YOUR TIRES DOWN, PLACE A SMALL BEAD OF CA GLUE BETWEEN THE WHEEL AND TIRE. BE SURE TO PLACE TIRE BEAD BACK ONTO THE RIM PROPERLY.



# 6x6



# **FRONT AXLE**











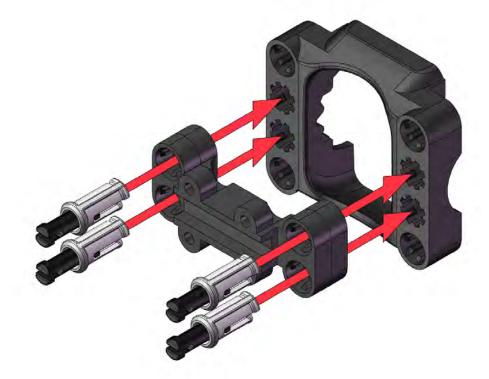












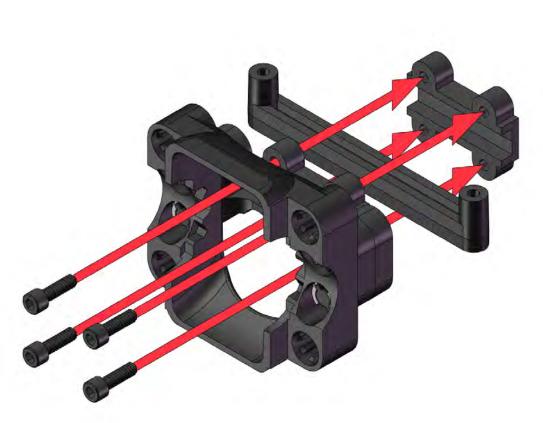


**x1** STEERING BAR

**X1** STEERING PLATE



**X 4** #4-40 x 3/8" SCREW



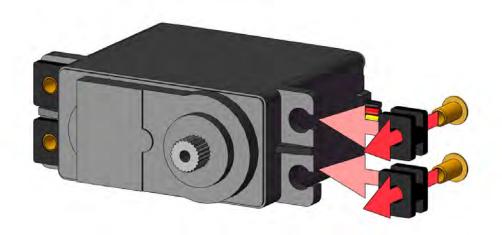










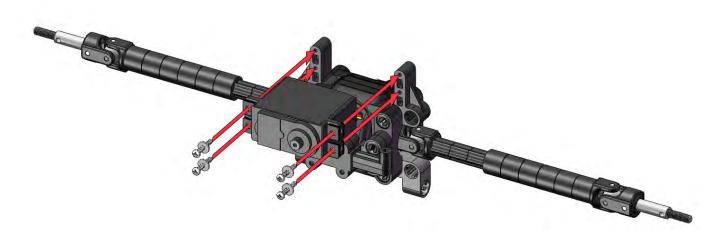


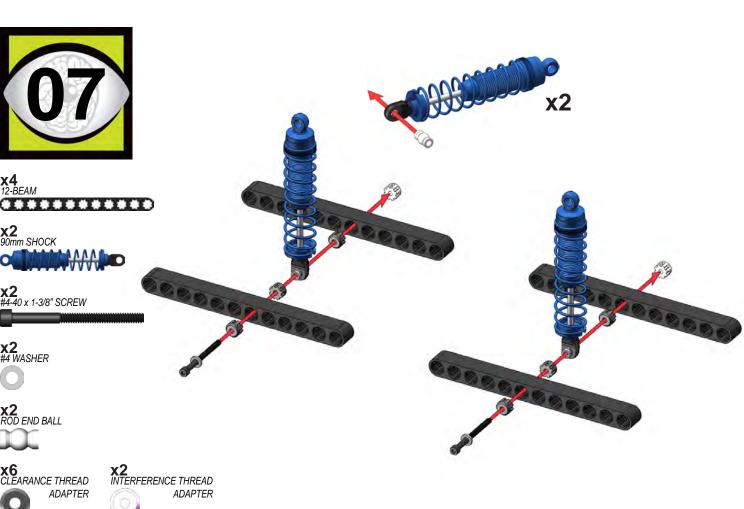


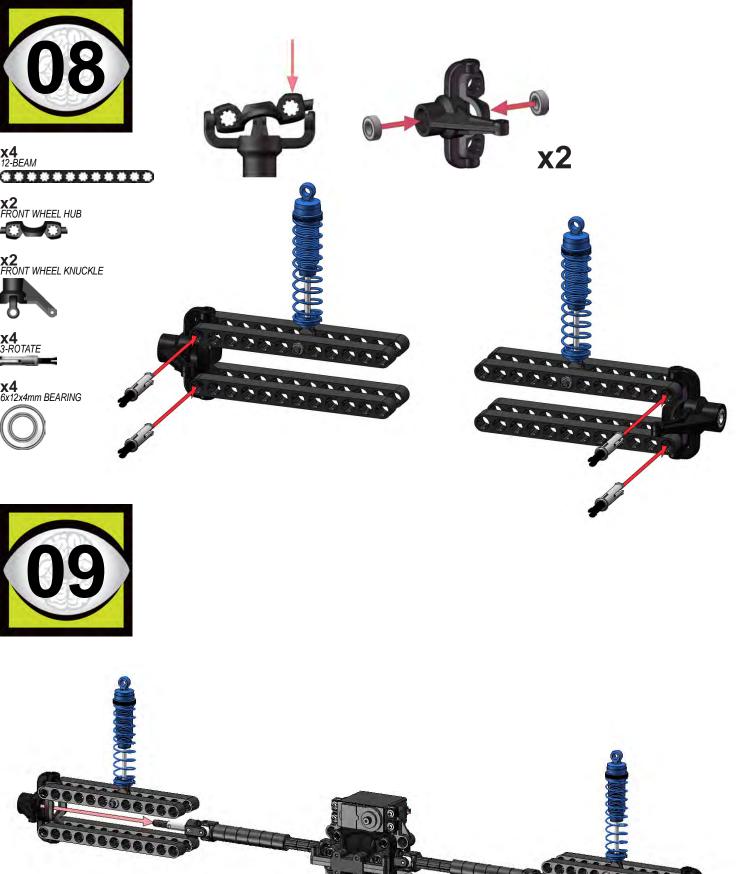
**x 4** #2-32 x 5/8" SCREW

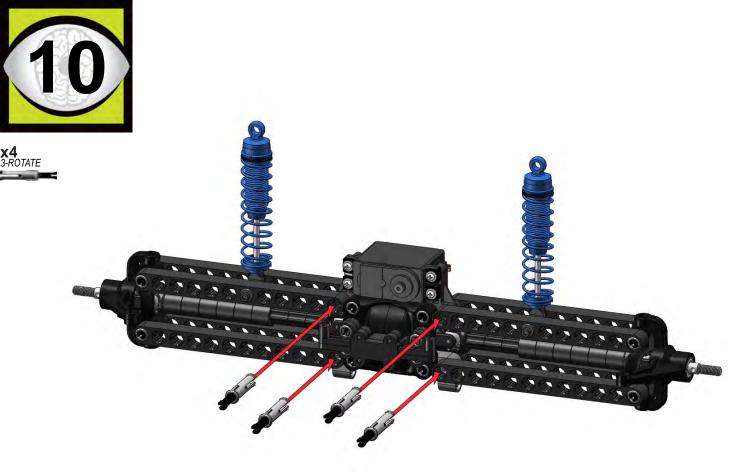
**x4** #2 WASHER

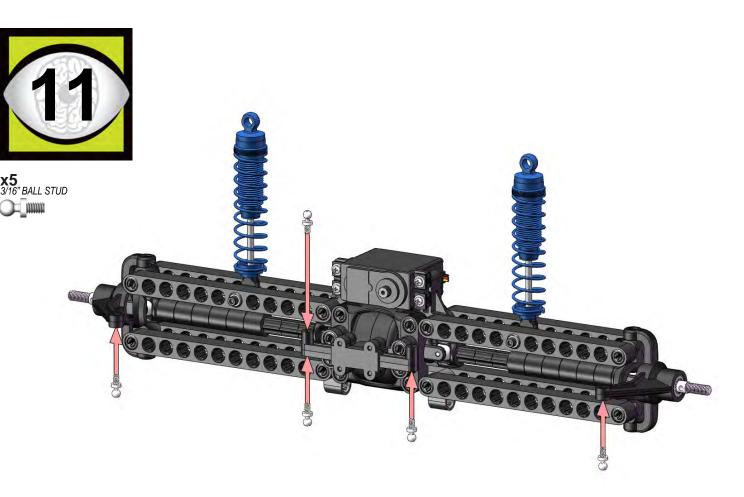










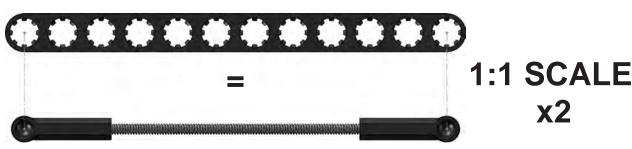




**x2** #4-40 x 3-3/4" THREAD ROD

**x4** 23mm BALL CUP



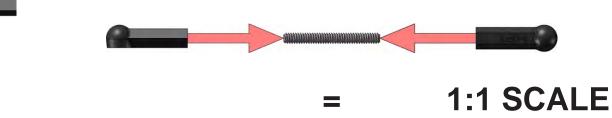






**x 1** #4-40 x 1" THREAD ROD

X2 18mm BALL CUP



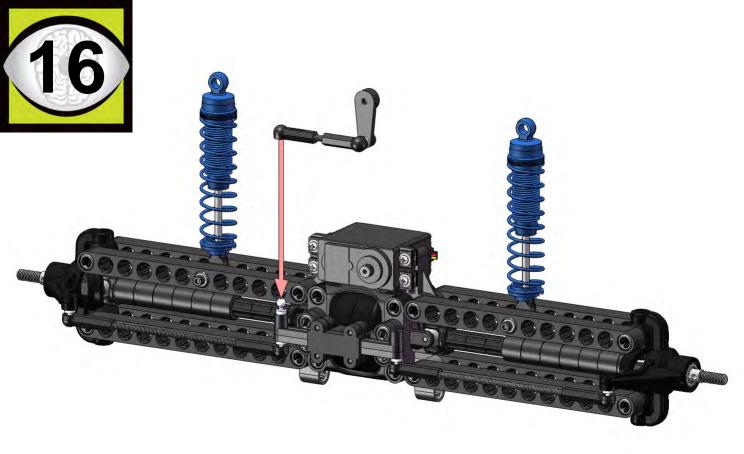




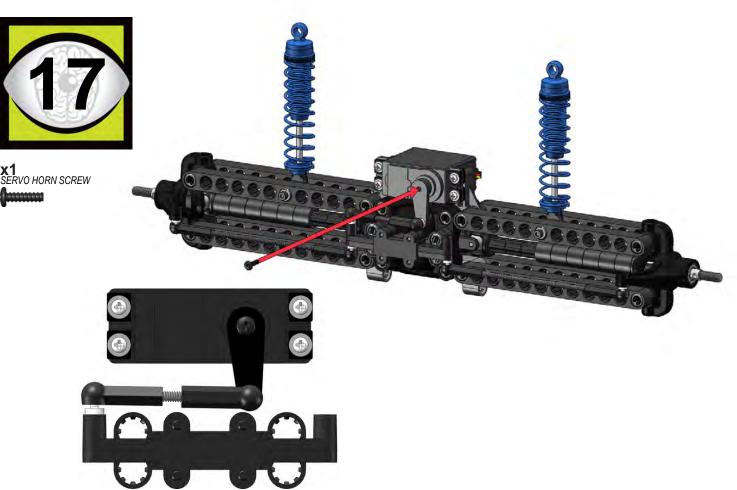
**x1** STEERING SERVO HORN

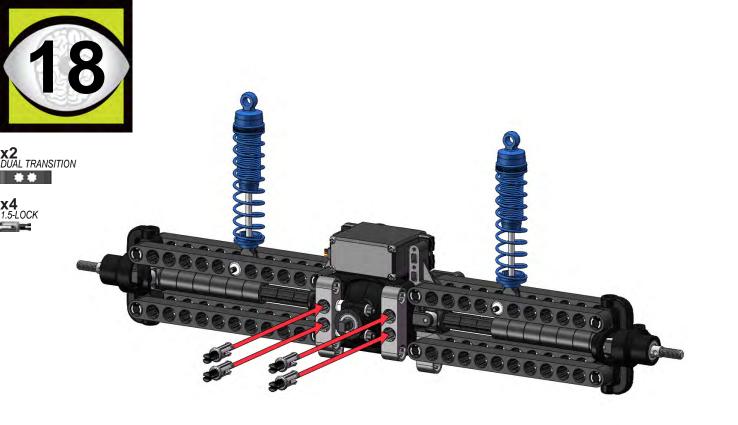


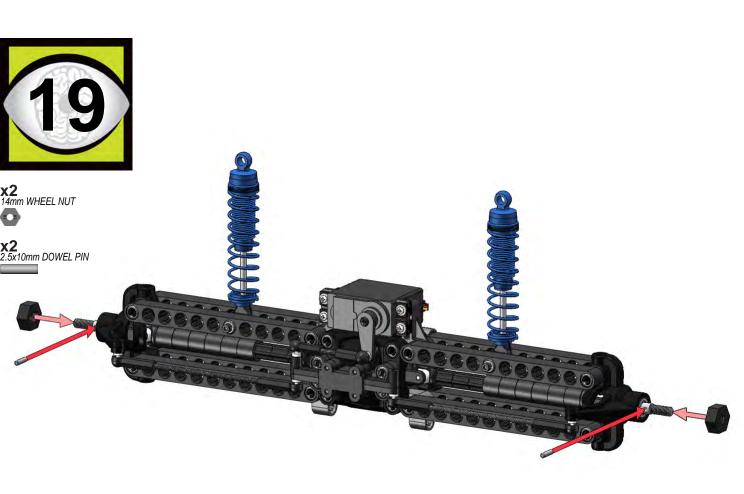




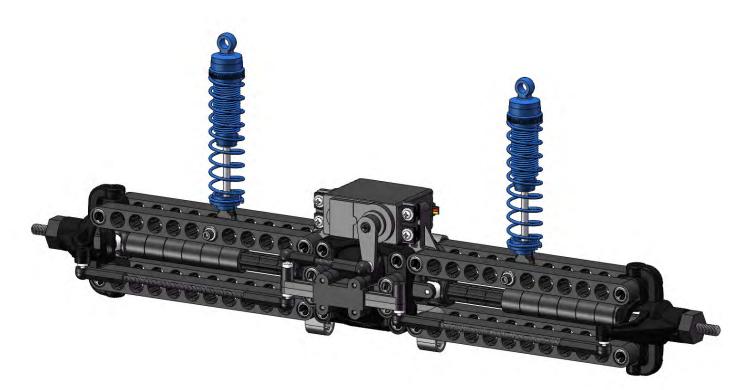
**NOTE:** REFER TO RADIO CONTROL SYSTEM INSTRUCTION MANUAL FOR PROPER SERVO SET-UP AND ADJUSTMENT







## **REAR AXLE**











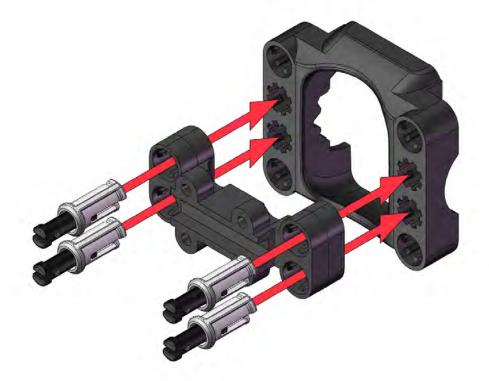












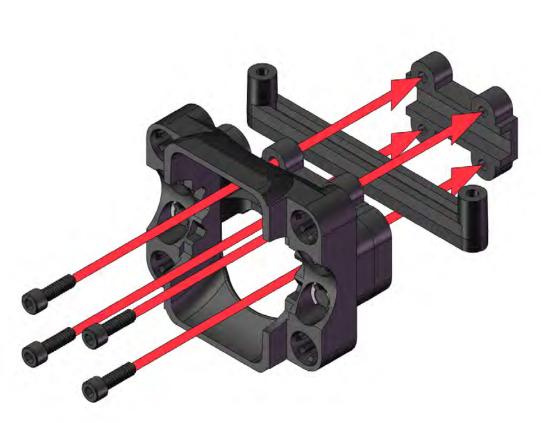


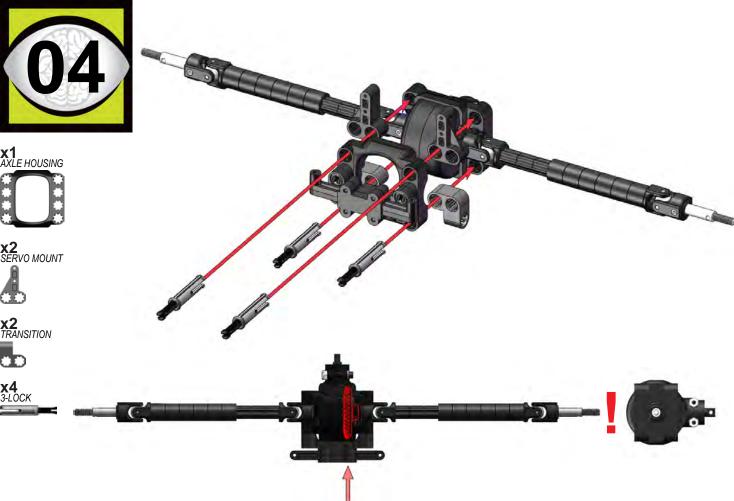


**x1** STEERING PLATE



**X 4** #4-40 x 3/8" SCREW

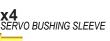


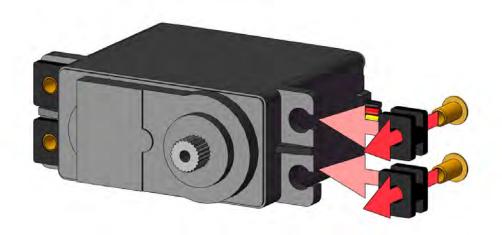








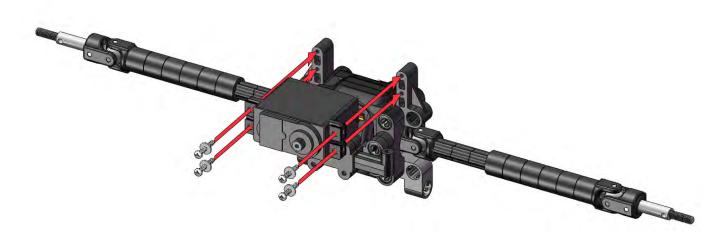


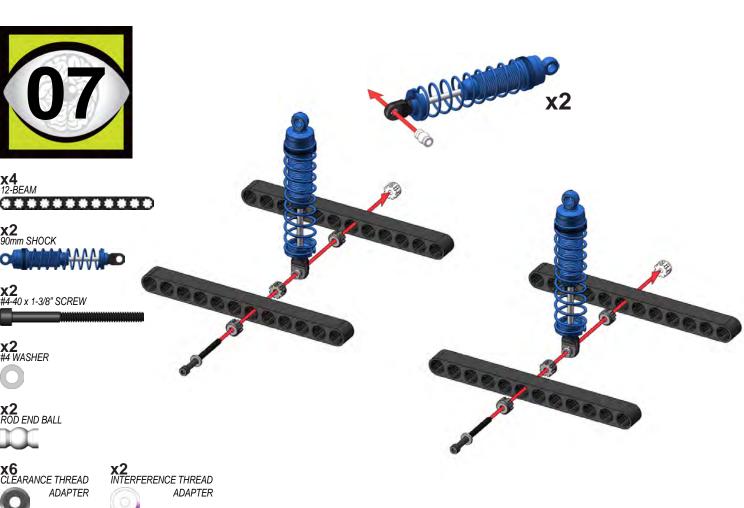


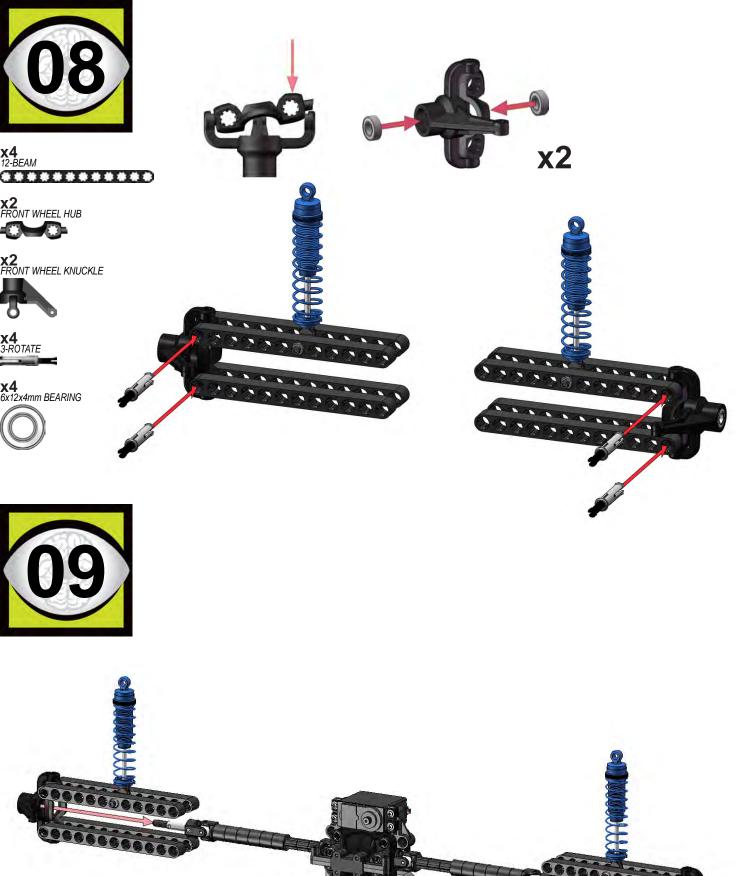


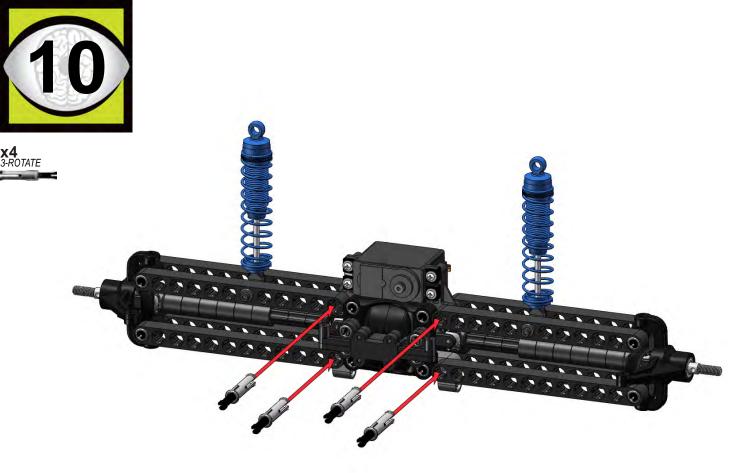
**x 4** #2-32 x 5/8" SCREW

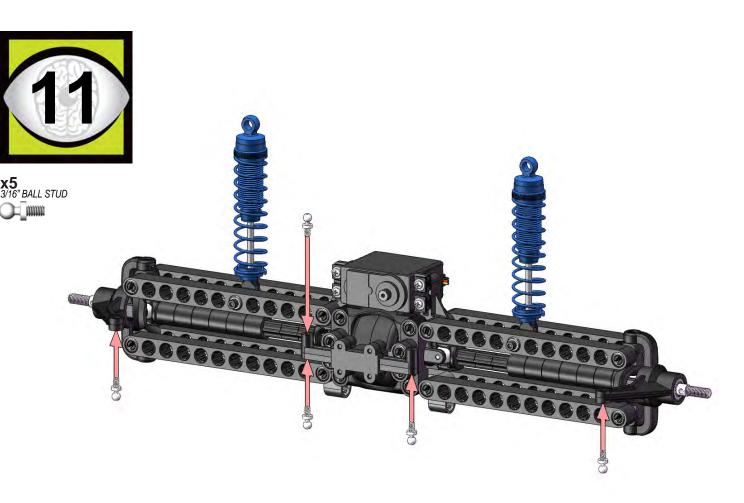
**x4** #2 WASHER







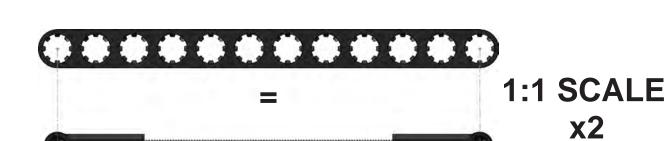


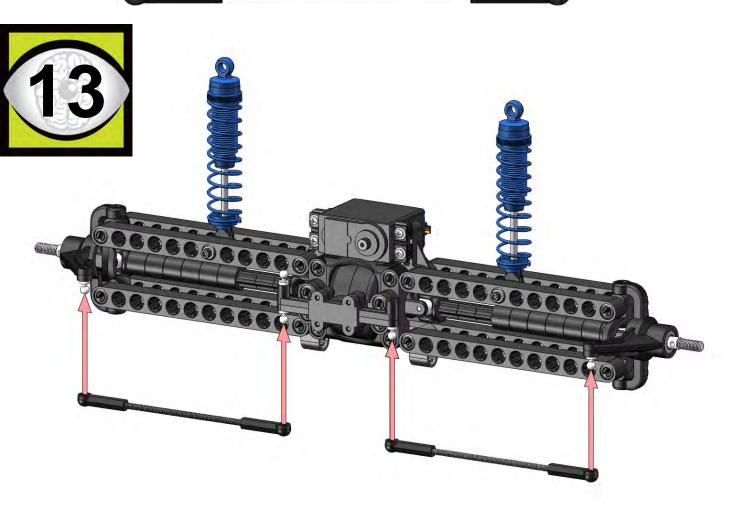




**x2** #4-40 x 3-3/4" THREAD ROD

**x4** 23mm BALL CUP

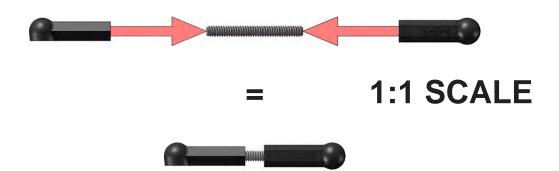




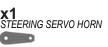


**x 1** #4-40 x 1" THREAD ROD

X2 18mm BALL CUP

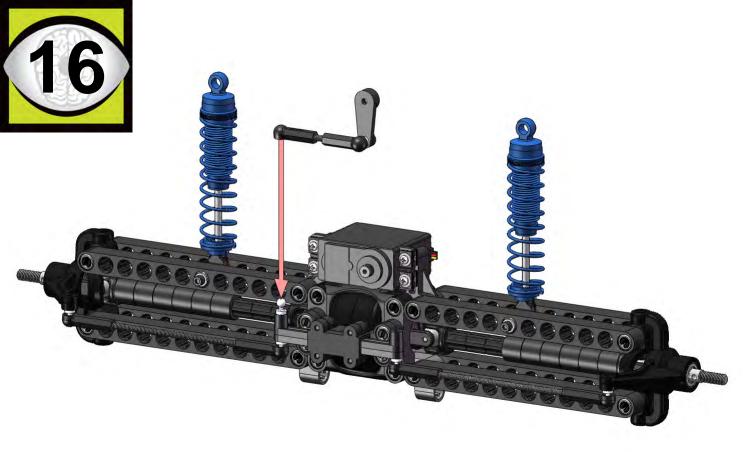




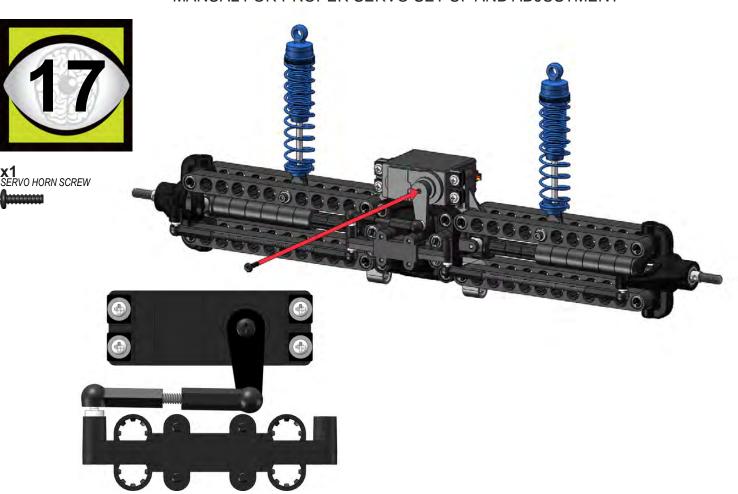


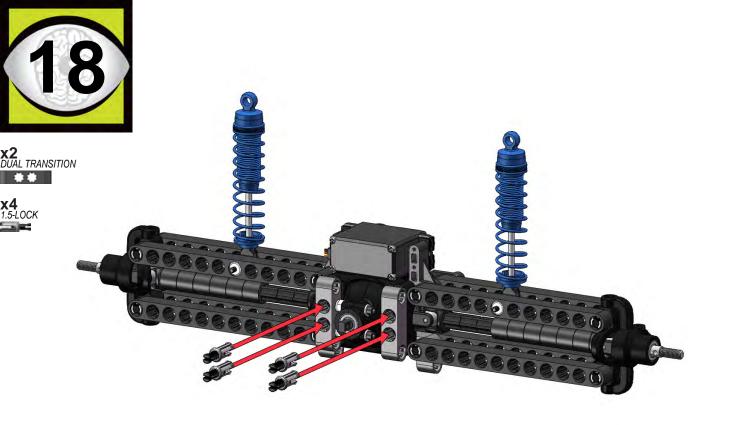


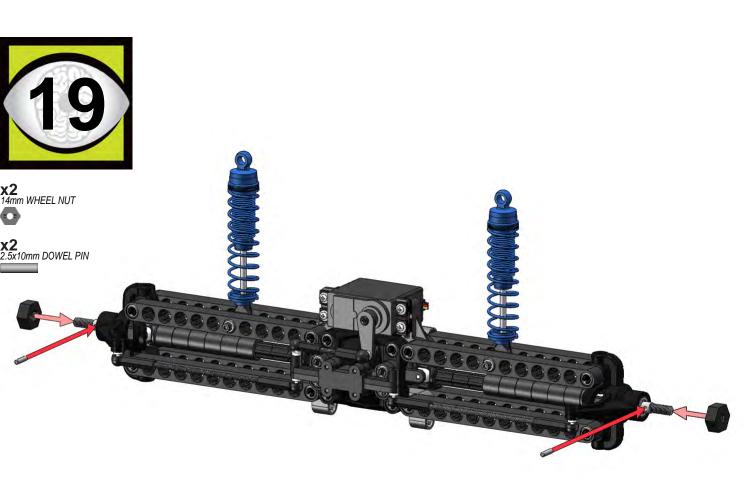




**NOTE:** REFER TO RADIO CONTROL SYSTEM INSTRUCTION MANUAL FOR PROPER SERVO SET-UP AND ADJUSTMENT







## **MIDDLE AXLE**





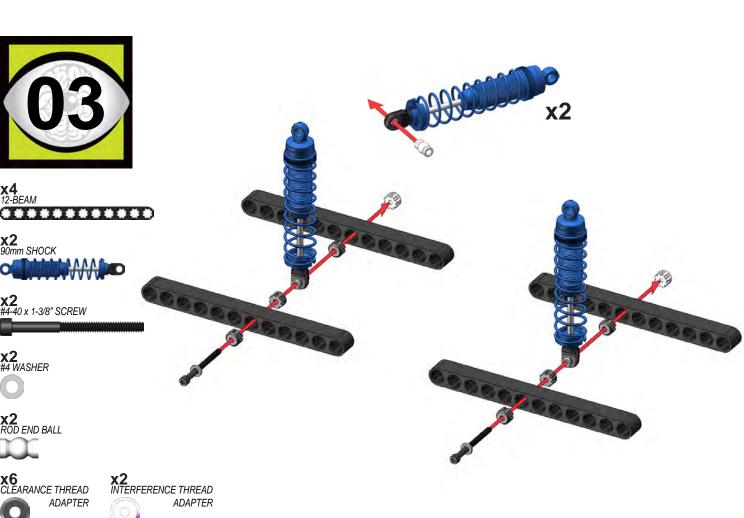


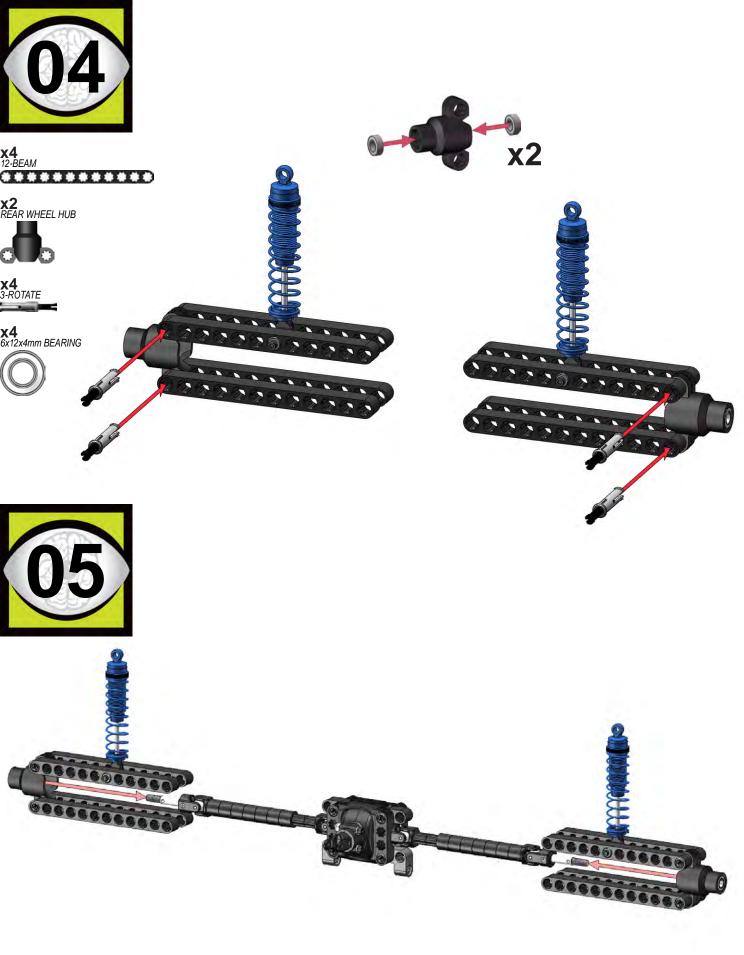






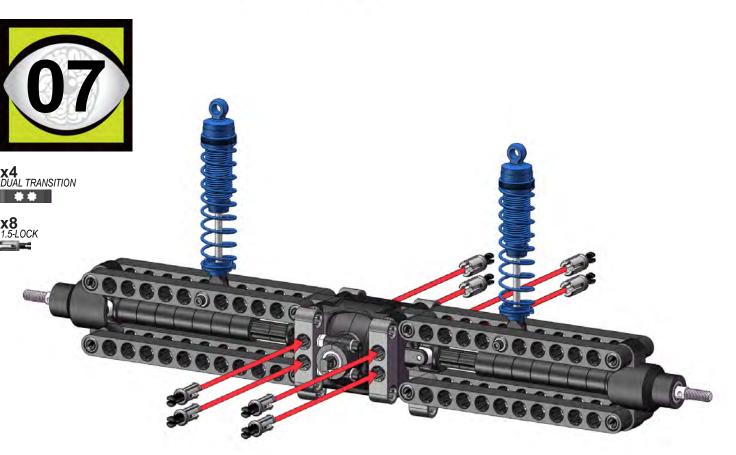


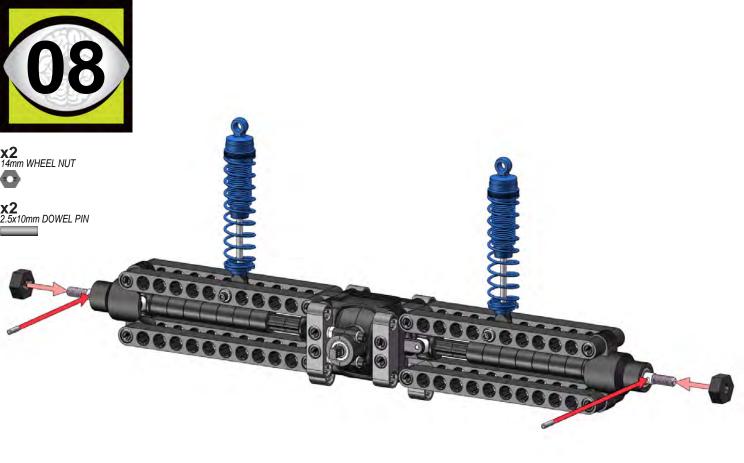














**x2** 15-BEAM

**x4** 13-BEAM

**x4** 12-BEAM **x8** 2-LOCK **x2** 



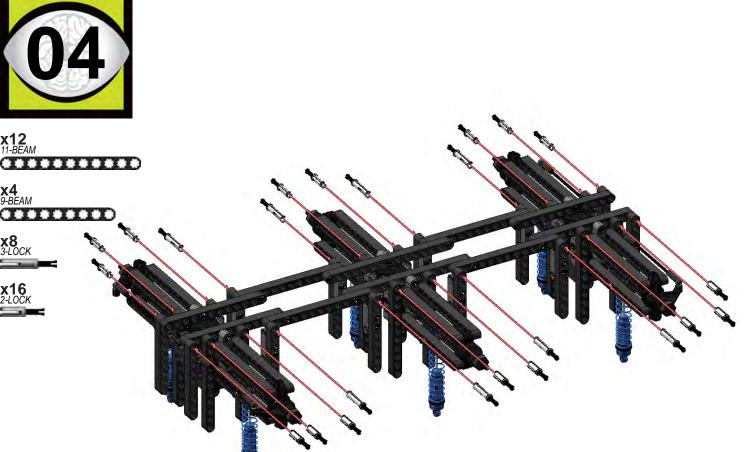


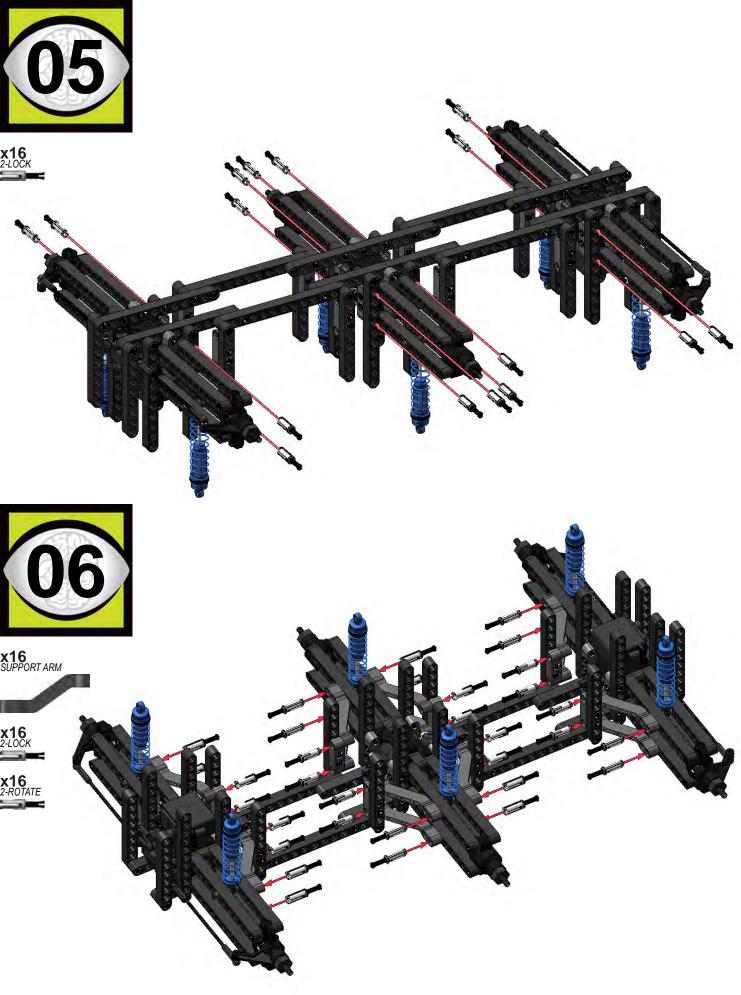
**x8** 9-BEAM

X8 DUAL TRANSITION

**x16** 2-LOCK



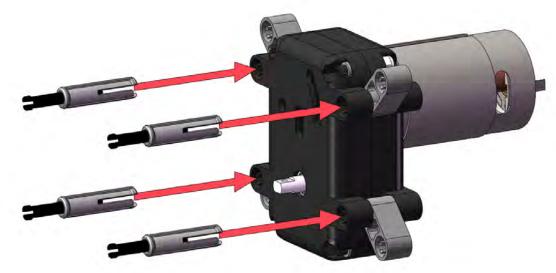








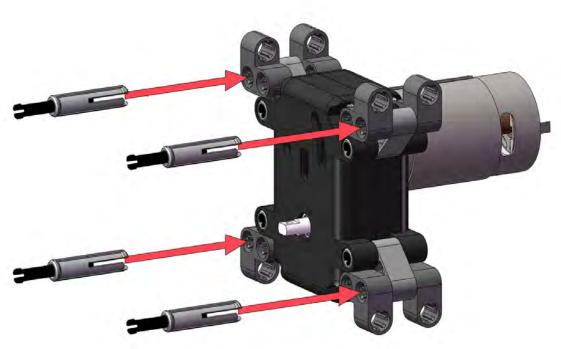


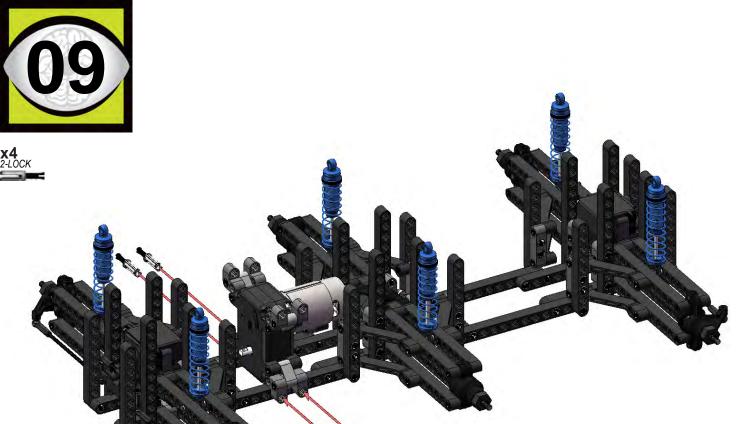




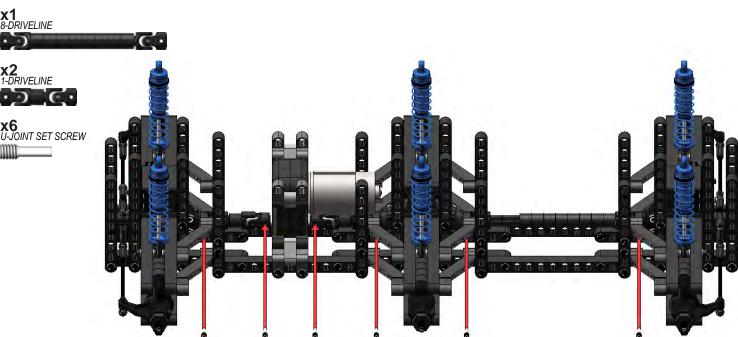














**X6** 15-BEAM

**X4** 12-BEAM

**x8** 2-LOCK **x2** 







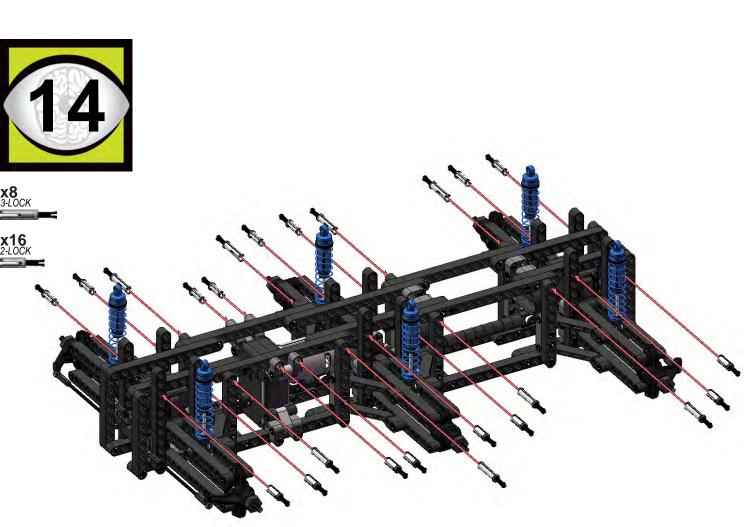


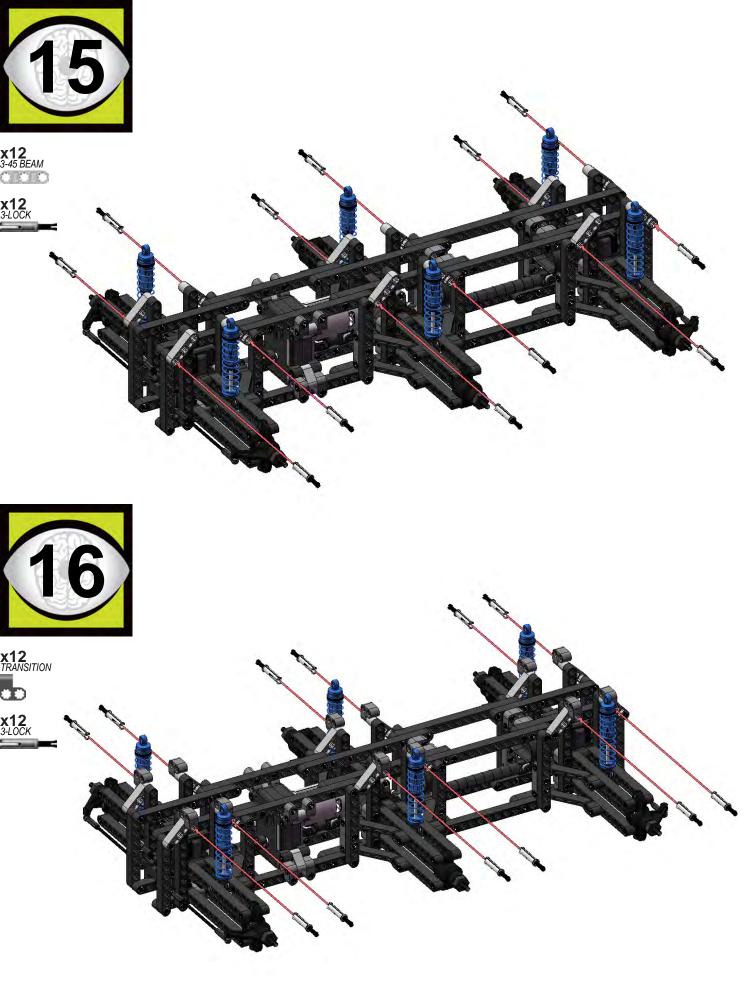
























REFER TO RADIO TRANSMITTER MANUAL AND FOLLOWING DIAGRAMS FOR PROPER INSTALLATION AND SET-UP.

USING THE WIRE TIES AND DOUBLE-SIDED TAPE PROVIDED, PLACE THE ELECTRONIC COMPONENTS ON THE FRAME SO THAT THEY ARE SECURE AND OUT OF THE WAY OF MOVING PARTS.

